

Hydrogen Infrastructure Blueprint Workshop
September 21-22, 2000
Las Vegas, NV

The DOE Hydrogen Program sponsored a workshop for 40+ experts from industry and the research community to develop a detailed “needs” list for the development and implementation of infrastructure to support a hydrogen transportation system. Parallel breakout sessions were held to provide input to the Program in these areas: standardized station design; containers; safety education; and, codes and standards. The attendee list, with breakout assignments, is attached.

The results of the meeting have been evaluated and synthesized to provide a comprehensive approach to infrastructure development for the DOE Hydrogen Program. As might be expected, there was substantial overlap (perhaps “synergy” is a better word) in the results of the four breakout groups. This report takes into account this synergy.

Public Awareness and Education: development of cost-effective hydrogen devices, or “widgets,” that begin to familiarize the public with hydrogen. Some examples would be remote-controlled toys, hand-held lawn equipment, replacements for rechargeable batteries, etc.

Field Verification Facility: integrated facility to accommodate a variety of hydrogen development and demonstration activities, including a general-purpose bay for testing and training activities related to hydrogen vehicles (off-board reforming/hydrogen generation, on-board and off-board [for liquid] hydrogen storage, vehicle performance, etc). The facility is expected to be flexible and expandable to include multiple industry users and researchers performing a variety of activities such as sensor testing and monitoring, on-board and off-board storage container testing, vehicle maintenance and training, safety training and exercises, development and testing of standardized interfaces (valves, connectors, etc), and design and optimization of refueling equipment (including hydrogen purity standards, storage interfaces, operation/maintenance procedures, etc). The data collected by the users will become part of a centralized database of information, the primary purpose of which is to provide current information on hydrogen components and systems to developers and researchers. A web-based system will be developed to support the database; expertise will be provided for the management and maintenance of the database. The database will include safety data, design and installation information, and vehicle operational data. These data will provide the technical basis for code and standard development, updates of which will be included in the database.

Hydrogen Infrastructure Working Group (IWG): In close coordination with the Natural Gas IWG, a Hydrogen IWG will be convened. The primary purposes of the Hydrogen IWG are: (1) to develop a strategy for the development and deployment of a hydrogen infrastructure; (2) to identify markets in which to focus the infrastructure efforts; (3) to identify policy issues (subsidies and incentives) that could accelerate the widespread adoption of hydrogen as a vehicle fuel; and (4) to review economic issues, including the establishment of realistic cost targets that evolve as the technology improves and vehicle penetration rates improve. In addition, the challenge of coordinating the development of codes and standards among international, national, and regional entities will be addressed.

Recognizing the timeliness of the September 21-22, 2000 workshop and the value of the results, the DOE Hydrogen Program has taken a number of initial steps in the implementation of these recommendations:

- A task for the development of a web-based database including, initially, operational data for hydrogen bus demonstrations has been initiated (the database is structured to be expandable)
- Storage testing and verification, in conjunction with the Office of Transportation Technologies, is under consideration for inclusion in upcoming solicitations
- A solicitation for a field verification activity, in conjunction with the State Energy Programs, is under development.